

AUG 11 1999

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# A DICTIONARY OF GENETIC ENGINEERING

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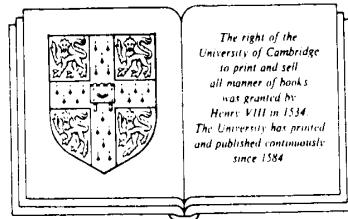
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CAMBRIDGE UNIVERSITY PRESS

*Cambridge*

*London New York New Rochelle*

*Melbourne Sydney*

AUG 11 1989

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Published by the Press Syndicate of the University of Cambridge  
The Pitt Building, Trumpington Street, Cambridge CB2 1RP  
32 East 57th Street, New York, NY 10022, USA  
10 Stamford Road, Oakleigh, Melbourne 3166, Australia

© Cambridge University Press 1985

First published 1985

Printed in Great Britain by the University Press, Cambridge

Library of Congress catalogue card number: 84-19973

*British Library Cataloguing in Publication Data*

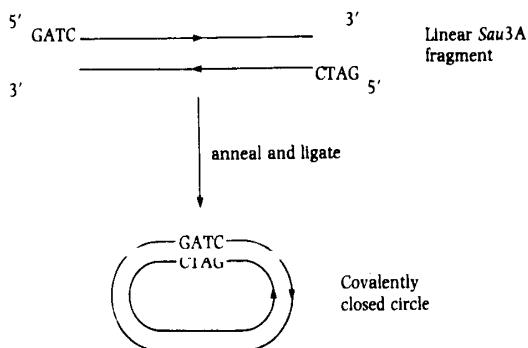
Oliver, S. G.  
A dictionary of genetic engineering.  
1. Genetic engineering  
I. Title II. Ward, John M.  
575.1 QH442

ISBN 0 521 26080 9

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## cleave

Fig. 6. Circularization.



**cleave** This term has essentially its normal English usage and means to make a double-stranded cut in DNA with a restriction endonuclease.

**clone** This term is used in a number of senses. As a noun it may mean (i) a population of recombinant DNA molecules all carrying the same inserted sequence, or (ii) a population of cells or organisms of identical genotype. It is most frequently used to describe a colony of microorganisms which harbour a specific DNA fragment inserted into a vector molecule.

As a verb 'to clone' means to use *in vitro* recombination techniques to insert a particular gene or other DNA sequence into a vector molecule.

**Cm<sup>r</sup>, Cm<sup>s</sup>** Chloramphenicol resistant, chloramphenicol sensitive.

**coding capacity** The amount of protein which can be specified by a given DNA or RNA sequence. Estimates of coding capacity usually require assumptions about the absence of introns or of overlapping genes; as a rough guide 1 megadalton of double-stranded DNA can encode 60–70 000 daltons of protein.

**coding sequence** That portion of a gene which directly specifies the amino acid sequence of its protein product. Non-coding sequences of genes include control regions, such as promoters, operators and terminators as well as the intron sequences of certain eukaryotic genes.

**coding strand** The strand of duplex DNA which is transcribed into a complementary mRNA molecule.

coding strand
DNA 3' TACTTCGCAAATCACCCGGGGCATA 5'
DNA 5' ATGAAAGCGTTAGTGGGCGCCCGTAT 3'
mRNA 5' AUGAAAGCGUUUAGUGGGCGCCGUAU 3'

**codon** The set of three nucleotides which specifies an amino acid. (See also *anticodon*.)

**codon bias** While the codon sequence of a gene is arranged into codons which specify twenty amino acids, the gene exhibits considerable bias. A codon specified by many different nucleotides can specify a particular amino acid, it is also possible that a codon specified by a single nucleotide can specify a different amino acid. This bias is significant because it can be used to express heterologous c

**cohesive ends** See *sticky ends*.

**Col E1** A small, rapidly replicating plasmid, such as pBR322, which contains a number of *ca.* 3000 genes. Cells carrying Col E1 when treated with the *imm* protein, are synthesised. On the mobilisation of the plasmid, the

**Col-factor** A plasmid factor.

**colicin** A protein which is lethal to sensitive bacteria. Colicin is usually encoded by Col factors found in plasmids, such as pBR322. (See also *colicinogen*.)

**colony hybridisation** A technique for detecting a radioactive probe in a population of cells. Colicin is usually encoded by Col factors found in plasmids, such as pBR322. (See also *colicinogen*.)

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